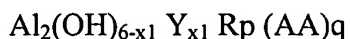


What is claimed:

1. An aqueous antiperspirant active solution comprising:

(i) basic aluminum halide having the empirical formula



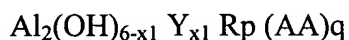
wherein Y is Cl, Br, or I and  $1.3 \leq x_1 \leq 1.7$ , wherein R is an organic solvent having at least two carbon atoms and at least one hydroxy group and p has a value of  $0 \leq p \leq 1.0$  and wherein (AA) is amino acid or amino acid compound and  $0 \leq q \leq 0.5$  and

- (ii) size exclusion high performance liquid chromatography test band having a Band I relative area value of less than 5%, a Band II relative area value of 20% to 60%, Band III relative area value of 10% to 35% and Band IV relative area value of 15% to 50% and the sum of Band III and Band IV relative area value of at least 45% and no more than 70% and
- (iii)  $^{27}\text{Al}$  NMR spectrum wherein at least 45% of the total area under the spectrum from +100 ppm to -100 ppm is contained in the sum of the areas of resonance lines at or below 10 ppm and
- (iv) in which the area of the resonance at 63 ppm is less than 0.1% of the total area under the spectrum from +100 ppm to -100 ppm and
- (v) which comprises 30 to 42% by weight of anhydrous basic aluminum halide antiperspirant active in water.

- 2. The antiperspirant solution of claim 1 formed by mixing with it in aqueous solution natural or synthetic antimicrobial compounds, such as triclosan, triclocarbon, zinc compounds, green tea extract, or neem oil and mixtures thereof.
- 3. The antiperspirant solution of claim 1 where Y is chloride and Al:Cl molar ratio is 1.3:1 to 1.4 to 1.
- 4. The antiperspirant solution of claim 1 where Y is chloride and Al:Cl molar ratio is 1.2:1 to 1.5:1.

5. The antiperspirant solution of claim 1 wherein the substituant AA is selected from the group consisting of glycine, DL-valine, alanine, lysine, arginine, and salts of amino acids.
6. The antiperspirant solution of claim 1 where amino acid is glycine.
7. The antiperspirant solution of claim 1 where amino acid compound is an alkali metal, an alkaline earth metal, ammonium or hydroxy salt of an amino acid, a metal glycinate and a hydroxy aluminum salt of an amino acid.
8. The antiperspirant solution of claim 1 where amino acid salt is selected from sodium glycinate, magnesium glycinate, potassium glycinate, calcium glycinate, zinc glycinate and strontium glycinate or mixtures thereof.
9. The antiperspirant solution of claim 1 where an organic solvent is a polyhydric alcohol having at least three to about 12 carbon atoms and at least two hydroxy groups and at a concentration of about 1 to 10 weight percent.
10. The antiperspirant solution of claim 1 wherein organic solvent is polyhydric alcohol and is selected from glycerin, diglycerol, glyceridacid and mixtures thereof.
11. The antiperspirant solution of claim 1 wherein the organic solvent is selected from the group consisting of ethylene glycol, polyethylene glycols, propylene glycol, dipropylene glycol, sorbitol, diethylene glycol, butylene glycol, hexylene glycol, 1,2-propylene glycol, 1,3 propylene glycol, glycerine, 1,2-hexanediol, hexanetriol, tripropylene glycol, propylene glycol methyl ether, isopropyl glycerol ether, dipropylene glycol methyl ether and combinations thereof at a concentration of about 1 to 10 weight percent.
12. The antiperspirant powder obtained by spray drying the solution of claim 1.
13. The antiperspirant powder obtained by spray drying the solution of claim 2.
14. The antiperspirant powder of claim 12 which have an average particle size of about 15 to 30 microns.

15. The antiperspirant powder of claim 12 which have bulk density from about 0.5gm/cc to 2 gm/cc.
16. The antiperspirant powder of claim 12 which is micronized to have an average particle size of about 1 to 15 microns.
17. A method of preparing the antiperspirant solution comprising an (a) aluminum powder and (b) aluminum halide having the empirical formula



wherein Y is Cl, Br, or I and  $1.3 \leq x_1 \leq 1.7$ , wherein R is an organic solvent having at least two carbon atoms and at least one hydroxy group and p has a value of  $0 \leq p \leq 1.0$  and wherein (AA) is amino acid or amino acid compound and  $0 \leq q \leq 0.5$  and

- (i) size exclusion high performance liquid chromatography test band having a Band I relative area value of less than 5%, a Band II relative area value of 20% to 60%, Band III relative area value of 10% to 35% and Band IV relative area value of 15% to 50% and the sum of Band III and Band IV relative area value of at least 45% and no more than 70% and
- (ii)  $^{27}\text{Al}$  NMR spectrum wherein at least 45% of the total area under the spectrum from +100 ppm to -100 ppm is contained in the sum of the areas of resonance lines at or below 10 ppm and
- (iii) in which the area of the resonance at 63 ppm is less than 0.1% of the total area under the spectrum from +100 ppm to -100 ppm and

which comprises the steps of reacting from about 30% to about 42% by weight of anhydrous basic aluminum halide antiperspirant active in water at a temperature greater than 85°C but below the reflux temperature; maintaining this reaction until the reaction products attain an Al:halide ratio of 1.2:1 to 1.5:1 and solution solids concentration of about 30 to 42 weight percent on an anhydrous basis; cooling and filtering said reaction products; and aging reaction products at room temperature for a period of from about one day to 6 months until the desired size exclusion chromatograph is obtained.

18. The method of claim 17 in which the basic aluminum halide is obtained by taking a conventional basic aluminum halide solution having a suitable aluminum to halide ratio adjustable to an Al:halide ratio of the solution to about 1.2:1 to 1.5:1 and adding an appropriate amount of aged or unaged lower basicity aluminum halide solution or HX or  $AlX_3 \cdot 6H_2O$  where X can be Cl, Br or I solution thereof and heating the aluminum halide solution to about 50 – 100°C for a period that may range from about 10 minutes to about 6 hours and thereafter aging the resulting aluminum halide at room temperature until the desired chromatographic distribution of aluminum species is obtained.
19. The method of claim 17 wherein the said method comprises adding an organic solvent before, during or after aging.
20. The method claim 18 wherein the said method comprises adding an organic solvent before, during or after aging.
21. The method of claim 17 wherein the aged antiperspirant active is first buffered with amino acid and or salts of amino acids or mixtures thereof and further comprises addition of an organic solvent.
22. The method of claim 18 wherein the aged antiperspirant active is first buffered with amino acid and or salts of amino acids or mixtures thereof and further comprises addition of an organic solvent.
23. The method of claim 17 wherein the reaction product obtained is spray dried to powder.
24. The method of claim 18 wherein the reaction product obtained is spray dried to powder.
25. The method of claim 23 wherein the method further comprises micronizing or screening or air classification or combination thereof to achieve particles with a desired particle size distribution, particle shape distribution and density.

26. The method of claim 24 wherein the method further comprises micronizing or screening or air classification or combination thereof to achieve particles with a desired particle size distribution, particle shape distribution and density.
27. The method of claim 23 wherein in the spray drying uses an atomizer is selected from a csc disc, a two fluid nozzle, a single fluid nozzle, a multiple drilled hole disc or porous metal disc.
28. The method of claim 24 wherein in the spray drying uses an atomizer is selected from a csc disc, a two fluid nozzle, a single fluid nozzle, a multiple drilled hole disc or porous metal disc.
28. The method of claim 23 wherein the dried powder has a loss on drying when kept at 105°C for 2 hrs. from about 5.0% to 20% by weight.
29. The method of claim 24 wherein the dried powder has a loss on drying when kept at 105°C for 2 hrs. from about 5.0% to 20% by weight.
30. The method of making claim 25 wherein particles comprise thin walled or thick walled hollow spheres, solid spheres and irregular shaped non-hollow particles in different combinations to achieve the desired particle size and shape distribution.
31. The method of claim 26 wherein particles comprise thin walled or thick walled hollow spears, solid spheres and irregular shaped non-hollow particles in different combinations to achieve the desired particle size and shape distribution.
32. A method of making basic aluminum halides as in claim 23 wherein the critical humidity of the product is about 5-20%.
33. A method of making basic aluminum halides as in claim 24 wherein the critical humidity of the product is about 5-20%.

